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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/811,161

03/26/2004

Manish Sinha

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EXAMINER

WALKER, KEITH D

ART UNIT

PAPER NUMBER

1795

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/811,161	<b>Applicant(s)</b> SINHA ET AL.	
	<b>Examiner</b> KEITH WALKER	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 16-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/1/06, 3/26/04</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election with traverse of Claims 1-12 in the reply filed on 11/6/07 is acknowledged. The traversal is on the ground(s) that "Examiner has not shown a separate classification between the inventions of independent claims 1 and 16" and because "Examiner has not shown a recognition of separate inventive effort by inventors". This is not found persuasive because as shown in the Election/Restriction the independent claims 1 and 16 do have separate classifications, namely 429/22 and 429/13 respectively. Since the two inventions have separate classifications, recognition of separate inventive effort by inventors is not required. Furthermore, the restriction is based on the fact that the process for using the product as claimed can be practiced with another materially different product and the product as claimed can be used in a materially different process and applicant has not provided evidence to the contrary.

The requirement is still deemed proper and is therefore made FINAL.

Regarding the species election, claims 13-15 will be rejoined with claims 1-12 so no species election is required.

Claims 1-22 are pending in the application with claims 16-22 withdrawn as a non-elected invention. Claims 1-15 are pending examination as discussed below.

***Information Disclosure Statement***

The information disclosure statements filed on 3/26/04 & 12/1/06 have been placed in the application file and the information referred to therein has been considered as to the merits.

***Drawings***

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to because the description of Figure 3 in at least paragraph [0027] is confusing. For instance, the first sentence of paragraph [0027] describes the approach threshold as the region between lines 66 and 68 and then in the next sentence describes the approach threshold as between lines 64 and 66.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102/103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5 & 10-13 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US Publication 2001/0049038 (Dickman).

Dickman teaches a fuel cell system with a power conditioning module that applies conditioned current to a load, a current meter for measuring and reporting the fuel cell's current and a fuel cell controller (Abstract, [0046, 0048, 0049, 0057, 0064]). The controller sets the available output power from the fuel cell and defines the maximum current drawn from the fuel cell through the power conditioning module ([0034, 0035, 0040 & 0041]). As the upper threshold of the available power of the operating fuel cell stacks is reached, the controller increases the available power by increasing the number of operating fuel cells. Alternatively, if the power demand decreases below a threshold, then the available power is decreased by reducing the number of operating fuel cells ([0046, 0051 & 0067]).

Regarding claims 10-12 are not further limiting to the apparatus since the claims are intended use of the apparatus. It is held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus satisfying the claimed structural limitations (MPEP 2114). Furthermore, the fuel cell system has an intended use in a motor vehicle ([0032]).

4. Claims 1-5 & 10-12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US Publication 2002/0082785 (Jones).

Jones teaches a fuel cell system comprising a fuel cell, a battery, a controller and current and voltage sensors. The fuel cell controller uses an algorithm to control the operation the fuel cell system (Abstract, [0018, 0021, 0022, 0024, 0027]). The voltage and current sensors inform the controller of the output voltage and current from the fuel cell as required by the load. A power conditioning module converts the power into AC voltage and supplies the power to a load ([0052]). The controller increases the available power output when an approach threshold is reached and maintains a constant power when the required power is not longer near the approach threshold. In a similar manner power is decreased when a diverge threshold is reached and then a constant power is maintained when the required power is no longer near the diverge threshold ([0029-0038]). The maximum current draw and available output power are set by the number of fuel cells in the stack and the available reactants flowing to the cells.

Regarding claims 10-12 are not further limiting to the apparatus since the claims are intended use of the apparatus. It is held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus satisfying the claimed structural limitations (MPEP 2114).

***Claim Rejections - 35 USC § 103***

5. Claims 6-9 & 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Publication 2001/0049038 (Dickman).

The teachings of Dickman as discussed above are incorporated herein.

Dickman teaches a power management scheme with a battery assembly ([0048]). However, Dickman is silent to a battery voltage detector or current detector.

Dickman teaches using current and voltage sensors with the fuel cell system and further teaches detecting and comparing voltages of the load with the DC-DC converter and in analyzing the stack performance ([0048 & 0060]).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the battery assembly with current and voltage sensors so the controller can know the operational parameters of the battery assembly and know when to use the battery assembly or when to recharge the battery assembly. These operating parameters allow the controller to operate the system more effectively and efficiently.

6. Claims 6-9 & 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Publication 2002/0082785 (Jones).

The teachings of Jones as discussed above are incorporated herein.

Jones teaches a power management scheme with a battery assembly ([0048]). However, Jones is silent to a battery voltage detector or current detector.



Jones teaches using current and voltage sensors with the fuel cell system and further teaches detecting and comparing voltages of the load with the DC-DC converter and in analyzing the stack performance ([0048 & 0060]).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the battery assembly with current and voltage sensors so the controller can know the operational parameters of the battery assembly and know when to use the battery assembly or when to recharge the battery assembly. These operating parameters allow the controller to operate the system more effectively and efficiently

/PATRICK RYAN/

Supervisory Patent Examiner, Art Unit 1795